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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional)	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 (37 CFR 1.8(a)) on <u>July 20, 2009</u>		Application Number <u>10/773,177</u>	Filed <u>February 9, 2004</u>
Signature <u>[Signature]</u> Typed or printed name <u>Lilach Elgressy</u>		First Named Inventor <u>Gabi Elgressy</u>	
		An Unit <u>1783</u>	Examiner <u>Arun S. Phasge</u>
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.			
This request is being filed with a notice of appeal.			
The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the <input checked="" type="checkbox"/> applicant/inventor. <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/98) <input type="checkbox"/> attorney or agent of record. Registration number _____ <input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____		Signature <u>[Signature]</u> <u>Gabi Elgressy</u> Typed or printed name <u>972-50-5300093</u> Telephone number <u>July 20, 2009</u> Date	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.			
<input checked="" type="checkbox"/> Total of <u>1</u> forms are submitted.			

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103(a) RejectionsWith reference to all pending claims

The instant electrochemical device has a metallic tank in which the wall serves as a cathode, and an anode is disposed longitudinally in the tank. When current is delivered, the water close to the wall attains a high pH value. Consequently, various dissolved ions in the water within the tank precipitate on the wall.

To clean the precipitate off the wall, a scraper is moved slowly downwards, against the wall, by a piston. The scraper is controlled by a control system utilizing a measured electrical parameter that depends on the depth of crystallized scale. However, the Specification articulates an important facet of my discovery:

When the sole criterion for activating the scraper is electrical resistance, I have found that the rate of scale deposition often decreases with time.... I attribute this decrease to various surface effects on the crystalline scale surface, including sliming, which reduce the effective surface area of scale crystals that is available for enhancing additional scale deposition. Such surface effects appear to have little effect on electrical resistance. [page 14, lines 6-11]

My discovery -- that electrical resistance as a sole criterion for activating the scraper is insufficient -- is not taught, nor fairly suggested by the cited prior art. Indeed, Rohrback teaches the monitoring of the electrical resistance -- alone -- to detect formation of "a minute quantity of adherent scale" [col.3, lines 48-49]; "deposition of at least nuclei of adherent precipitate on said test surface means will... Increase the contact resistance... [claim 25]"; "employing the increase... of said contact resistance as an indication of the formation... of significant adherent precipitate on said test surface means". [claim 25]

I believe that the significance of my discovery has been overlooked. A skilled practitioner, in assimilating the teachings of Rohrback, reaches the inexorable conclusion that electrical contact resistance, alone, provides sensitive and substantially immediate scale detection, even of "nuclei of adherent precipitate". Consequently, this skilled practitioner would be completely oblivious to the problem that I discovered and elaborated in the Specification -- that in the electrochemical device of the present invention, the use of electrical resistance as the sole criterion for activating the scraper may often be inadequate.

I now proceed to discuss my solution to this problem. Firstly, I note that problems sometimes remain unsolved, or unsolvable. When solvable, the solutions may be complex, cumbersome, or costly, or cause secondary problems to arise. In this case, I did discover a solution, as described in the Specification:

It must be emphasized that control systems based both on electrical resistance... and time interval achieve superior results in terms of the rate of scale deposition.... augmenting the electrical resistance criterion with a maximum time elapsed between scrapings criterion greatly improves the performance....

Hence, by incorporating an additional criterion -- that of maximum time elapsed between scrapings, the deleterious surface effects on the crystalline scale surface are curtailed, and the rate of scale deposition remains substantially constant over time. [page 14]

The solution that I found is extremely simple, inexpensive and robust.

The skilled practitioner would not have come up with this solution because, based on the cited prior art, he would not have been aware there is a problem, as discussed above. *A fortiori*, the prior art cannot be relied upon to suggest a solution to a problem that was unrecognized by the prior art. Moreover, even with the knowledge that the problem exists, my particular solution -- to correct a deficiency in a resistance-based control system by incorporating a time measurement/parameter in addition to the resistance measurements -- is not taught, nor fairly suggested by the cited prior art. In view of any of the above arguments alone, and certainly in view of the above arguments combined, I respectfully submit that the *prima facie* rejection of the pending claims is improper.

In rejecting the claims, the Office Action (pp 3-4) asserts a motivation for modifying the Brochure by the teachings of Rohrback and Elliott:

it has been well settled that such a combination of two techniques... Into a third technique which is to be used for the very same purpose would have been obvious to one having ordinary skill with the predictable result in the accomplishment of the same purpose.

The Office Action did not provide a reference for such a "well-settled motivation". Moreover, this motivation appears to be improperly applied. Rohrback makes reference to patents teaching methods that "require visual inspection, weighing, heat transfer changes, or other slow and insensitive approaches" (col. 3). Rohrback teaches away from visual inspection as being a slow and insensitive approach. The use of a timing mechanism would be considerably more insensitive than visual inspection, because under the most ideal conditions, timed scraping might -- at best -- approximate visual inspection. Thus, *a fortiori*, Rohrback teaches away from using a timing control scheme, which would be even more insensitive than the physically-based approaches that Rohrback explicitly rejects.

Nor is the Office Action's conclusion accurate: the "predictable" result of combining control based on electrical resistance with a non-physically based time parameter is a deterioration in control performance.

Moreover, a plethora of practical and significant engineering considerations known to those skilled in the art dictates against scraping the wall more frequently than deemed necessary by electrical resistance considerations. These were provided on page 12 of the previous Response. Some of these considerations are described in the Specification (page 10, lines 10-17), nonetheless, they do not appear to have been given due consideration in the previous Office Action.

In my last Response, I make various arguments (pp 11-14) that appear to have been answered fallaciously, or to have been incorrectly characterized by the subsequent Office Action. The Office Action asserts that the "Elliott patent is cited to show the conventional techniques used in the art to remove scale by either observation (which would include the Rohrback techniques of monitoring the resistivity and thickness) or the use of a timer". [page 3]

Scrutiny of the cited Elliott passage in context reveals that he discloses "simple observation", which appears to be visual observation. The observation is NOT the scale on the surface, rather, collected scale in receptacle 58a [col. 11, lines 61-64]. The actuation period of the timer "may be readily determined by simple observation depending on the type of water or wastewater used in the boiler, the size of the boiler, and the like". Elliott does not fairly suggest "the Rohrback techniques of monitoring the resistivity", as asserted by the Examiner. Moreover, even if Elliott could be construed to disclose visual observation of scale on the boiler surface, this is not properly combinable with Rohrback and the inventive electrochemical device, both of which are devices that are extremely sensitive to scale thickness.

The cited Rohrback passages do not show a measurement of thickness, rather, as recited by claim 25, the increase of contact resistance indicates formation of adherent precipitate on the test surface means.

In citing *Ex parte Oblaya* and *In re Young*, the last Office Action mischaracterizes my arguments and misapplies the teachings of the case law. "The test of obviousness under 35 USC 103 is not the express suggestion of the claimed invention in any or all of the references, but what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them." "One cannot show non-obviousness by attacking the references individually...". "The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious." [pages 4-5] These citations tend to support, rather than damn, my invention, as claimed.

In view of the arguments made hereinabove, I respectfully submit that my discovery -- that electrical resistance as a sole criterion for activating the scraper is insufficient -- is not taught, nor fairly suggested by the cited references, taken collectively. Consequently, a skilled practitioner, presumed to be familiar with these collective references, would not find any teaching or suggested teaching to solve a problem that was unknown to these references, taken individually or in combination. Thus, the applicant has not merely "recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious", as asserted by the Examiner. There is no such "natural flow" from the cited prior art. Rather, I have identified a problem that had gone unrecognized, and further discovered a simple and robust solution to overcome that problem.

The instant control system, as claimed, is adapted to activate the scraper based on both a measurement of an electrical property, and a pre-determined time parameter. The arguments provided above are applied to independent claims 45 and 59, and to dependent claims 46-55 and 60-64. I respectfully submit that the Examiner has not shown that the referenced prior art teaches, or fairly suggests, a control system that is structurally capable of receiving two measured parameters, and controlling the scraper based on the inputs from both parameters, and *a fortiori*, a control system "adapted to activate said

scraper to scrape said wall, based on both: (i) a measurement of an electrical property associated with a thickness of said scale deposition, and (ii) a pre-determined time parameter."

Independent claim 65, dependent claims 66-69

The arguments provided above are applied to claims 65-69. In addition, while the combination of references might be used to read on a control system "adapted to activate said scraper to scrape said wall, when a measurement of an electrical property associated with a thickness of said scale deposition reaches a pre-determined value", the Examiner has not shown that the referenced prior art teaches, or fairly suggests, a control system "adapted to activate said scraper to scrape said wall", "if prior to reaching said a pre-determined value, a pre-determined time from an immediately previous scraping is exceeded". This recitation clearly distinguishes from the cited prior art. While the Examiner considers this language to be "functional" [page 2], I have argued in the immediately preceding paragraph that the control systems taught by the cited prior art are not "adapted", i.e., structurally capable of receiving two measured parameters, and controlling the scraper based on the inputs from both parameters.

Moreover, even if considered to be functional, it is well settled that functional language does not, in and of itself, render a claim improper. Any concern over the use of functional language at the so-called "point of novelty" stems largely from the fear that an applicant will attempt to distinguish over a reference disclosure by emphasizing a property or function which may not be mentioned by the reference and thereby assert that his claimed subject matter is novel. In re Swinehart. "A patent applicant is free to recite features of an apparatus either structurally or functionally. See In re Swinehart.... Moreover, ("[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims.")" In re Schreiber.

With regard to the inventive control system, that fear is baseless, and the limitations patentably distinguish from the passages cited by the Examiner.

Dependent claims 53-55, 60-63, 68

The above-referenced dependent claims were rejected as being unpatentable over the cited prior art "for reasons of record". I respectfully submit that those reasons of record fail to specifically relate to these dependent claims, and to the specific limitations recited by each claim. Consequently, a prima facie case of unpatentability and the burden to rebut this "rejection" has not been shifted to Applicant.

More particularly, with respect to claims 63 and 68, the system controls the scraper "wherein said thickness reaches up to a maximum thickness of 800 microns". Elliott is not properly combinable for scale thicknesses that cannot be visually observed, or that cannot be estimated by visual observation.

Gabi Elgressy
July 20, 2009

